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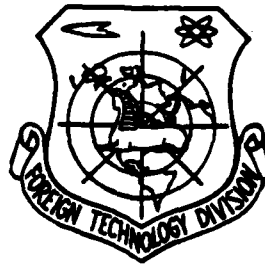


21ST YUGOSLAV ETAN CONFERENCE AND 5TH YOGOSLAV
SYMPOSIUM ON MICROELECTRONICS

by

Maricic Andriya

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SYMPOSIA AND EVENTS

Marica Jurisic-Zec,
Editor

21ST YUGOSLAV ETAN CONFERENCE AND 5TH YUGOSLAV SYMPOSIUM ON MICROELECTRONICS

The 21st Yugoslav ETAN Conference took place on Banya Luka's "Cultural Center" premises from June 6 to 10, 1977. At the same place, between June 7-9 the 5th Yugoslav Symposium on Microelectronics was conducted, organized by the Federal Committee of Experts on Electronic Components and Materials.

Mg. Nedjeljko Pehar was the Chairman of the Organization Committee of the 21st ETAN Conference. During the first plenary session he submitted a report entitled "The Achieved Levels and Directions of the Social and Economic Development of the Banya Luka Community." At the 2nd plenary session Prof. M. Ristic read his report (which was prepared together with Prof. Dragoslav Popovic), entitled "Energy as a Subsystem in Shaping Development." In a very scholarly way, supported by an abundance of data, the present stage of economic development has been outlined. In addition, new energy sources up to 2000 AD, in the world as well as in Yugoslavia, were extrapolated. During the third plenary session Dr. Branimir Lolic reported and discussed "Some Issues in the Yugoslav Development of Electronics." This report was well updated and resulted in a great number of questions and an interesting discussion. The latter were focused on specific issues raised in the report, or on the aims of ETAN in the coming period. Particular interest was paid to those parts of the report which

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supplied information relating to the present status and to the future trends in the development of the manufacturing of TV sets, calculators and components for professional electronics. The development of the domestic manufacturing of calculators in general, and the beginning of the production of the domestic minicomputer in particular, were indicated to be an imperative need for the development of the other branches of the industry. However, the attention was called to the utter lack of the production programs' coordination among the Yugoslav manufacturers. Such a situation points to the need for an administrative protection of the Yugoslav electronic industry. The latter has already grown so much that it employs almost as many people as the Yugoslav automobile industry. The example of the automobile manufacturers which are characterized by a lack of coordination, tends to question whether our society should protect another disorganized industrial branch. At the present time, this is the main question.

We would also like to emphasize the well noted discussion by Prof. Milic about the present situation in Yugoslav college education. It was found that in the majority of the universities the curricula are lagging behind the rapidly developing technology. It was emphasized, in addition, that some hardware aspects have been promoted, without justification, to the detriment of the software. It is in this latter case where the great potential of our people lies. This becomes particularly true today when the cost of the software has reached 40% of the price of new computer systems. In the continuation of the discussion, it was recommended to the Executive Committee on ETAN, to establish a special commission which would study, in more detail, the present levels of education programs and their connection with the growth of the national economy. Such a commission should analyze

all the latest data and, on that basis, formulate its guidelines for the further activities of the ETAN sections.

The program of the Conference included 231 submissions namely 159 reports and 72 statements. Both the reports and statements were processed in the 12 special conference commissions. Authors belonged mostly to the faculties of the Universities of Belgrade, Lyublyana, Zagreb, Nish and Banya Luka, or they were from the staff of manufacturing firms such as "Iskra", "Mihaylo Pupin", "Rudi Cajevac", "EI", and others. The reports included information concerning new or improved products, updated results on more important projects, work on the application of microprocessors, and experiences with methods already known but which are being applied under new conditions or for different purposes.

The Commission for Telecommunications has received the greatest number of submissions, 37 reports and 14 statements.

In addition, the meetings of this Commission were very well attended this year. For this reason it is, perhaps, necessary to also mention the appearance of some irresponsible methods in a few cases of submission, both of reports and statements. For example, in some discussions one could hear such words as "...and the answer to your question will be found in our next report which will be submitted during this meeting."

It was also noted that some authors upgraded their statements into reports without justification when it was evident that both topic and method applied could be evaluated only as statements. The reason for stressing this point is that all participants had been informed well in advance, in November 1976, about how to proceed in preparing their submissions. Similar cases were also noted at meetings of the other commissions.

We believe that the above practice results from the uneven criteria which were applied at the evaluation process of submissions. If ETAN, indeed, has aspirations to raise the quality of its conferences to the level of "a national conference", then much more order and coordination are necessary in the work of the evaluation commissions. Such things should not happen again, nor should long distance telephone calls be made, as they were this year, to authors themselves to try to find out the character of their submissions. At the Banya Luka Conference it was noted that such undesirable occurrences were few and isolated.

During the six meetings of the Telecommunication Commission the characteristics of systems which used the new technology were reviewed, in addition to the results obtained from the research on projects of complex systems. A significant amount of research was dedicated to the analysis of various antenna systems.

The Commission for Calculator Technology had received 15 reports and 8 statements. Among them were predominant themes relating to the hardware and software applications of micro-processors. There were also a few works in the area of continual and discrete system simulation.

The Commission for Electrical Circuits received 20 reports and 2 statements. Areas which were dealt with were active filters, delay networks, transitory phenomena, and others.

The Commission for Electronic Components and Materials had received 13 reports and 7 statements. They related to laser technology, thick and thin layer hybrid technology, humming analysis, and characteristics of new and improved products.

The Commission for Biomedical Technology received 16 reports and 4 statements. The dominant topics were those dealing with characteristics of new and supporting systems, different aspects of computer use, et al.

The Commission for Automation Management received 12 reports and 6 statements. Reviews of new or improved products, the application of computers in analysis, synthesis, or identification processes, as well as surveys of works in the theory of automated management were equally present.

The Commission for Acoustics had 9 reports and 9 statements. Characteristics of new products were given regarding certain aspects of the application of microprocessors in synthesis of electronic music, alphabet, traffic noise, et al.

To the Commission for Electronics 8 reports and 8 statements were submitted. They were related generally to the application of CMOS elements and microcomputers, the reliability of the systems was analyzed, et al.

The Commission for the Physical Chemistry of Materials has received 8 reports and 7 statements. Influences of technological methods on the characteristics of materials (for instance, on tantalum condensers, or ceramic magnets) were analyzed. In addition, some new alloys were also introduced, et al.

In the Commission for Nuclear Technology and Physics 8 reports and 6 statements were submitted. A great number of papers brought out new methods of research, or described new systems. In addition, the results of the application of specific computer programming, or of new mathematic models systems were reviewed.

The Commission for Robotics and Artificial Intelligence received 6 reports and one statement. Generally, results obtained on the basis of mathematical models of the kinematic systems were considered.

The Commission for the Management of Integrated Systems was mostly criticized for unjustified upgrading of submitted papers. Thus, the conference agenda of this Commission consisted of 7 reports, while for some of them not even summaries were received until the set deadline.

On the concluding plenary meeting of the Conference all the chairmen of the Commissions submitted their work reports. After this the Conference Committee published an evaluation of the papers submitted, and issued diplomas of recognition to the authors of the best papers. In the Commission for Nuclear Technology and Physics the best paper was awarded the prize of the Institute for Nuclear Sciences, "Boris Kidric", Vinca. In the Commission for the Physical Chemistry of Materials, the prize awarded was given on behalf of the School of Electronics of the University of Nish.

It was also decided to publish, in 4 volumes, all of the papers which were submitted to the 21st Conference, and also that the next 22nd Conference of ETAN will take place in Zadar.

During the session of the 21st Conference the Working group for Information and Calculator Technology, was formed. Also the by-laws of this Group were approved, since this group continues and enlarges the activities of the former Federal Committee for Data Processing.

On the 5th Yugoslav Symposium on Microelectronics in the area of application, 12 reports; in the area of technology, 7 reports; and in the area of methods of elevation and physics of integrated circuits 7 reports were submitted. In addition, two panel discussions took place. The topic on the first panel was "A Survey of the Potential and Prospects of Yugoslav Manufacturers of Microelectronic Components and Circuits", which was submitted by Nada Gosovic, from the staff of the firm "Rudi Gajavec", in Banya Luka. The second panel discussed the topic "Architecture, Programming Support, Technology, and Application of Microprocessors", with an introductory report by G. Obradovic, also from the staff of "Rudi Gajavec", in Banya Luka.

Both panel discussions were very well attended, and there was a high number of discussion participants. On this occasion, an uncoordinated growth, in this branch of the national economy, was noted. We would only like to point out here that two licenses were approved for the manufacture of microcalculators, specifically the 8-bit microcalculator with LSI technology to the firm "Iskra", and another, the 16-bit microcalculator, to the firm "Rudi Gajavec." The latter will use semiconductor components in the middle and low level integration. It is expected that the first domestic microcomputers will be on the Yugoslav market by the end of 1977, or by the beginning of 1978.

For the participants of the Conference and Symposium, in the National Theater of Bosanska Krayina, the play "Michelangelo Buonarroti" by Miroslav Krleza, was performed. In addition, a trip to Kozara Mrakovica Mountain was organized.

Maricic Andriya